

CBCS SCHEME

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15EC653

Sixth Semester B.E. Degree Examination, June/July 2018 Artificial Neural Network

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. List any four neuronal signal function used in ANN. (08 Marks)
b. Explain the learning algorithms in neural network. (08 Marks)

OR

- 2 a. State and explain, XOR is non-linearly separable. Also explain the implementation of XOR function using two layered network architecture. (10 Marks)
b. Explain the learning objective for threshold logic neurons. (06 Marks)

Module-2

- 3 a. With example, explain the application of LMS algorithm to noise cancellation. (08 Marks)
b. Discuss pattern mode training and batch mode training in back propagation algorithm. (08 Marks)

OR

- 4 a. Discuss LMS algorithm. Determine the stability and rate of convergence condition for LMS algorithm. (08 Marks)
b. Discuss the weight update procedure in steepest descent search algorithm. (08 Marks)

Module-3

- 5 a. Explain the support vector machine design objective for linearly separable class problem. (10 Marks)
b. Write three well known classes of approximating function and their inner product kernels which satisfy mercer condition. (06 Marks)

OR

- 6 a. Compare RBF with support vector machine. (08 Marks)
b. Explain k-means clustering algorithm in RBFM. (08 Marks)

Module-4

- 7 a. Draw the architecture of hop field auto-associative memory. Also explain electronic circuit interpretation of additive dynamic structure of Hopfield network. (10 Marks)
b. Write the difference between Boltzmann machine and Hopfield network. (06 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42+8 = 50, will be treated as malpractice.

OR

- 8 a. Explain the concept of simulated annealing. Also write the basic steps used in simulated annealing method. (08 Marks)
b. Explain how BAM can be used as Hetro associative memory. (08 Marks)

Module-5

- 9 a. Explain the concept of dimensionality reduction using principal component analysis. (08 Marks)
b. Explain supervised learning task using LVQ [Learning Vector Quantization] algorithm. (08 Marks)

OR

- 10 a. Discuss any two application of SOM. (08 Marks)
b. Write a short note on Growing Neural Gas algorithm. (08 Marks)

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